

REMARKS

Reconsideration of the above-identified patent application in view of the present amendment and the following remarks is respectfully requested.

Per the Examiner's request, two copies of U.S. Patent No. 3,503,814, of which the Examiner did not receive copies with the Information Disclosure Statement of January 5, 2001, are attached to this Amendment. Consideration of this reference is respectfully requested.

This amendment amends claim 27, cancels claim 28, adds new claims 33-35, and amends the Abstract to remove legal phraseology.

The Office Action provisionally rejected claim 1 under the judicially created doctrine of obviousness-type double patenting over claim 1 of copending application serial number 09/818,127. Copending application serial number 09/818,127 is directed to a multi-stage pushbutton switch and is related in no way to the invention of claim 1. Thus, the provisional rejection of claim 1 of the present invention over claim 1 of serial number 09/818,127 is improper and should be withdrawn.

The Office Action also provisionally rejected claims 15 and 16 under the judicially created doctrine of obviousness-type double patenting over claims 10 and 12 of copending application serial number 09/756,509. The assignee of the present invention has no copending application with the serial number 09/756,509. Therefore, the provisional rejection of claims 15 and 16 of the present invention over claims 10 and

12 of serial number 09/756,509 is improper and should be withdrawn.

The Office Action rejected claims 1-3 and 7 as anticipated by Thorn, U.S. Patent No. 4,928,991. This rejection is respectfully traversed.

Anticipation requires a single prior art reference that discloses each element of the claim. W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983) cert. denied 469 U.S. 851 (1984). For a reference to anticipate a claim, "[t]here must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention." Scripps Clinic & Research Foundation v. Genentech Inc., 18 USPQ2d 1001, 1010 (Fed. Cir. 1991).

Claim 1 recites a microelectromechanical system device (MEMS device) energizable to cause actuation of an actuatable vehicle occupant protection device. Thorn fails to teach or suggest a microelectromechanical system device. In rejecting claim 1 the Office Action states that reference number 10 of Thorn is the microelectromechanical system device. The Office Action specifically states that cartridges 12 would be mechanical and the printed circuit board 24 would include microelectronics. It is respectfully suggested that the cartridges 12 and the printed circuit board 24 of Thorn, collectively, do not form a microelectromechanical system device.

A word in a claim must be given its plain meaning unless specifically defined in the specification of the patent

application. M.P.E.P. §2111.01. The plain meaning of a term is the meaning given to that term by those of ordinary skill in the art. M.P.E.P. §2111.01. Therefore, the plain meaning of the term "microelectromechanical system device" to those skilled in the art must be considered when examining claim 1. It is respectfully suggested that one of skill in the art of the present invention is one of skill in the art of vehicle occupant safety devices.

The article "So what are these MEMS?, MEMS Overview from MCNC, at <http://www.people.cornell.edu/pages/akt1/what.html> (copy included in contemporaneously filed IDS) defines microelectromechanical systems (MEMS) as integrated micro devices combining electrical and mechanical components that are fabricated using integrated circuit batch processing techniques. It is respectfully suggested that those skilled in the art of vehicle occupant safety devices will understand the term "microelectromechanical system (MEMS) device" to have the above-defined meaning.

Those skilled in the art of vehicle occupant safety devices are familiar with the use of MEMS devices in sensors for sensing the occurrence of a vehicle crash event. For example, each of the following United States Patents is directed to MEMS-based accelerometers that may be used in detecting a vehicle crash event in which deployment of an air bag is desired, U.S. Patent Nos. 6,000,287, 6,028,343, and 6,149,190 (copies of each are included in contemporaneously filed IDS). In each of the above-identified patents, a MEMS device is an integrated micro device combining electrical and

mechanical components that are fabricated using integrated circuit batch processing techniques.

The above-identified patents illustrate that, to those of ordinary skill in vehicle occupant safety systems, the plain meaning of the term "microelectromechanical system (MEMS) device" is an integrated micro device combining electrical and mechanical components that are fabricated using integrated circuit batch processing techniques. Thus, given this plain meaning of the term "microelectromechanical system device," it is clear that Thorn fails to teach or suggest this feature. Those of ordinary skill in the art will recognize that the combination of gas generating cartridges 12 and the printed circuit board 24 of Thorn is not a microelectromechanical system (MEMS) device. Therefore, the rejection of claim 1 is improper and should be withdrawn. Allowance of claim 1 is respectfully requested.

Claims 2-5, 7, 11, and new claims 33-35 depend from claim 1 and are allowable for at least the same reasons as claim 1. Additionally, claims 2-5, 7, 11, and 33-35 are allowable for the specific limitations of each claim.

Specifically, new claim 33 recites that the MEMS device includes a substrate on which is formed a plurality of electric heating elements. The electric heating elements are energizable to cause actuation of the protection device. Thorn fails to include a substrate on which is formed a plurality of electric heating elements. Faigle et al., U.S. Patent No. 5,460,405 also fails to teach or suggest this

feature of claim 33. Therefore, allowance of claim 33 is respectfully requested.

New claim 35 recites that the MEMS device includes at least one micromechanical component. Neither Thorn nor Faigle et al. teaches or suggests a MEMS device including at least one micromechanical component. Therefore, allowance of claim 35 is respectfully requested.

Claims 15, 16, 18, 19, and 21 were rejected as obvious under 35 U.S.C. §103 over Faigle et al., in view of Kurokawa et al., U.S. Patent No. 3,724,870 and Rink et al., U.S. Patent No. 5,692,776. This rejection is respectfully traversed.

The M.P.E.P. sets forth the criteria for a rejection for obviousness as follows:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

See, M.P.E.P. § 706.02(j) citing In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

A combination of Faigle et al., Kurokawa et al., and Rink et al. fails to teach or suggest all of the claim limitation of claim 15. Specifically, the combination fails to teach or suggest an outer layer having a plurality of rupturable segments. In rejecting claim 15, the Office Action states that it would be obvious to one of ordinary skill in the art

or suggests a single igniter or initiator associated with each fluid source. None of the references teaches a layer of a multi-layered device that includes a plurality of heating elements. Additionally, none of the references teaches or suggests means for selectively energizing individually energizable heating elements of a single base layer. Therefore, for these additional reasons, allowance of claim 15 is respectfully requested.

Claims 16, 18, 19, and 21 depend from claim 15 and are allowable for at least the same reasons as claim 15. Additionally, claims 16, 18, 19, and 21 are allowable for the specific limitations of each claim.

Claims 27-30 were rejected as obvious under 35 U.S.C. §103 over Graves et al., U.S. Patent No. 5,404,263, in view of Faigle et al. This rejection is respectfully traversed.

Claim 27 recites an apparatus comprising an actuatable vehicle occupant protection device and an array of individually energizable devices for producing one of inflation fluid and combustion products for actuating the protection device. Neither Graves et al. nor Faigle et al. teaches or suggests an apparatus comprising an actuatable vehicle occupant protection device and an array of individually energizable devices. In rejecting claim 27, the Office Action cites Figures 6-12g of Graves for the teaching of the array of devices. However, after reference to Figures 6-12g of Graves et al. and to the specification of Graves et al. from col. 5, line 27 to col. 7, line 42, it is clear that Figures 6-12g illustrate a method of manufacturing a plurality

of header assemblies 20. Of the structures illustrated in Figures 6-12g, only one header assembly 20 is inserted into each air bag inflator, as shown in Fig. 5. The plates 70 and 102 illustrated in Figures 6-12g are used only during the manufacture of the header assemblies 20 and form no part of an apparatus including an actuatable vehicle occupant protection device. Faigle et al. also fails to teach these features of claim 27. Therefore, allowance of claim 27 is respectfully requested.

Moreover, claim 27 recites means for energizing selected ones of the array of individually energizable devices, the means comprising a base that includes a plurality of heating elements. The Office Action cites the first fixture plate 70 and the second fixture plate 102 for the teaching of the base. However, as described above, Graves et al. makes it clear that the first and second fixture plates 70 and 102 are only used during the manufacture of the header assemblies 20 and are not used in an apparatus that includes an actuatable vehicle occupant protection device. Faigle et al. also fails to teach or suggest this feature of claim 27. Thus, for this further reason, allowance of claim 27 is respectfully requested.

Claims 29 and 30 depend from claim 27 and are allowable for at least the same reasons as claim 27. Additionally, claims 29 and 30 are allowable for the specific limitations of each claim.

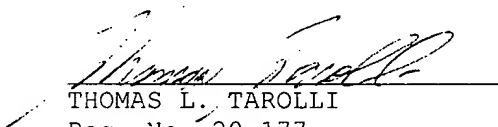
In view of the foregoing, it is respectfully submitted that the above-identified patent application is in condition

for allowance, and allowance of the above-identified patent application is respectfully requested.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,


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Serial No. 09/755,704

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 27 was amended as follows:

27. (Amended) An apparatus comprising:

an actuatable vehicle occupant protection device;

an array of individually energizable devices for
producing one of inflation fluid ~~or~~ and combustion products
for actuating said protection device; and

means for energizing selected ones of said array of
individually energizable devices,

said means for energizing comprising a base that
extends across said array and that includes a plurality of
electric heating elements associated one with each of said
energizable devices,

said means for energizing further comprising control
means for directing electric current into selected ones of
said plurality of electric heating elements to energize said
selected ones of said energizable devices.

Claim 28 was cancelled.

New claims 33-35 were added.

IN THE ABSTRACT:

The Abstract was amended as follows:

An apparatus (10) for helping to protect a vehicle occupant ~~comprises~~ includes an actuatable vehicle occupant protection device (12), and a microelectromechanical (MEMS) device (20) energizable to cause actuation of the protection device. In one embodiment, the MEMS device (20) is an energizable fluid source for emitting a primary fluid for actuating an inflatable protection device (12). The apparatus (10) may ~~comprise~~ include a plurality of MEMS devices (20) individually actuatable to control inflation of the protection device.